THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

convenes the

WORKING GROUP MEETING

ADVISORY BOARD ON

RADIATION AND WORKER HEALTH

CHAPMAN VALVE SEC

The verbatim transcript of the Working Group Meeting of the Advisory Board on Radiation and Worker Health held telephonically on April 23, 2007.

C O N T E N T S

April 23, 2007

TRANSCRIPT LEGEND

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-- (inaudible)/ (unintelligible) signifies speaker failure, usually failure to use a microphone.

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P R O C E E D I N G S

(9:00 a.m.)

WELCOME AND OPENING COMMENTS

DR. LEWIS WADE, DFO

DR. WADE: This is Lew Wade. I serve as the DFO, Designated Federal Official, for the Advisory Board, and this is a meeting of the work group of the Advisory Board, this work group focusing on the Chapman Valve SEC petition. It's chaired by Dr. Poston with members Griffon, Clawson, Roessler and Gibson. I've heard all of those individuals identify themselves as being on the call. Are there any other Board members on the call other than the members of this working group?

(no response)

DR. WADE: Any other Board members other than the members of this working group?

(no response)

DR. WADE: I would ask that the NIOSH/ORAU team identify themselves and whether or not they're conflicted on this site. Then I'll ask the SC&A team, ask for other federal

employees. I'll ask for workers, worker reps, member of Congress or their staffs, and then anyone else who would like to identify. So let's start with the NIOSH/ORAU team.

DR. NETON: This is Jim Neton, NIOSH, and no conflict.

MR. ROLFES: This is Mark Rolfes, NIOSH health physicist, no conflict.

MS. BLOOM: Cindy Bloom, ORAU team, no conflicts.

DR. WADE: Other members, NIOSH/ORAU?

(no response)

DR. WADE: SC&A team?

DR. MAURO: John Mauro, no conflict.

DR. WADE: Other SC&A?

(no response)

DR. WADE: Other federal employees who are on the call by virtue of their employment who are working on this call?

MR. KOTSCH: Jeff Kotsch, Department of Labor.

DR. WADE: Good morning, Jeff.

MS. HOMOKI-TITUS: Liz Homoki-Titus with Health and Human Services.

DR. WADE: Good morning, Liz.

Other feds?

MS. CHANG: Chia-Chia Chang with NIOSH.

DR. WADE: Good morning.

MS. DOWNS: Amia Downs, NIOSH.

DR. WADE: Good morning.

Other feds?

(no response)

DR. WADE: How about workers, worker reps, members of Congress or their staffs?

MS. BASSETT: Hi, this is Bethany Bassett in Senator Kennedy's Boston office.

DR. WADE: Good morning.

MS. BASSETT: Good morning, how are you all?

DR. WADE: Fine, thank you. Thank you for joining us.

MS. BASSETT: Of course, I just wanted to put out there, I know it's about 9:15 now, and I have another emergent matter to get to at about 10:00. So if there's any possibility of us talking specifically about Chapman Valve between that time, that would be fantastic.

DR. WADE: When you say, do you want to make a statement or --

MS. BASSETT: We just have a couple of issues to raise. I don't know what the first

point of the agenda is.

DR. WADE: Well, we can raise your issues when we finish the introductions if that's acceptable with you, Dr. Poston.

DR. POSTON: That's fine.

DR. WADE: Other introductions, members of Congress, workers, worker reps, Congressional staff?

MR. BROEHM: This is Jason Broehm from CDC, joining a few minutes late.

DR. WADE: Good morning, Jason.

Is there anyone else on the call who would like to be identified for the record?

MS. HOMOKI-TITUS: Lew, I just wanted to let you know that Emily Howell is dialing in right now.

DR. WADE: Good.

Anyone else who would like to identify for the record?

Ray, you're up and ready to go?

COURT REPORTER: Yes, sir.

FROM SENATOR KENNEDY'S OFFICE

DR. WADE: Well, why don't we hear from our friend from Boston. Please, the floor is yours.

MS. BASSETT: Okay, we just wanted to raise a couple issues regarding Chapman Valve, in specific, the Ferguson Reports. We haven't seen that, and we're hoping there's a possibility that we actually could see that document. Do you guys know if that is possible?

DR. WADE: Jason, I would leave that to your good offices.

MR. BROEHM: Yes, I've been in touch with Liz and Emily about that, or at least Liz, and they're still waiting to get a ruling on that. They need to check on both FOIA and Privacy Act issues.

MS. HOMOKI-TITUS: Yeah, we're waiting for the CDC FOIA Privacy Act office to get back to us on that.

MS. BASSETT: Okay.

MS. HOMOKI-TITUS: I will call them again today although I doubt I will get an answer before tomorrow because we have a meeting with them to go over a number of issues tomorrow.

MS. BASSETT: Okay.

DR. WADE: Jason will be your point of contact.

MS. BASSETT: Great.

MR. BROEHM: I will work to get that to you as soon as I can.

MS. BASSETT: Thank you, Jason, Portia and I both -- Portia can't be on the call this morning unfortunately.

And I also just wanted to raise another issue, and it's -- please, anyone feel free to jump in with this if you have comments or concerns. Regarding the date of the fire, we originally had down, and correct me if I'm wrong in any way, but May 23rd? And we're finding just in talking to our constituents and other folks that there may have been an earlier fire. So we just wanted to raise the point that could it be taken into account higher exposures because of this earlier fire that we're finding out about now.

DR. WADE: Do you have any information or is there any information that anyone could share with the work group more than that?

MS. BASSETT: I can get some paper on that. We've kind of just heard it in discussions mostly with constituents. I know that we had originally said the fire date was May 23rd, and

then I believe samples have been done for June 11th.

MS. BLOOM: I think maybe May 23rd is the date that you're thinking the fire is. We originally assumed that it occurred sometime in June --

MS. BASSETT: Okay.

MS. BLOOM: -- moved that back to May 31st, and now this report clearly states that there was a fire on May 23rd.

MS. BASSETT: And is the report the Ferguson Report?

MS. BLOOM: Yes.

MS. BASSETT: Okay, that's probably what we're hearing it from then just from constituents who are hearing that this report is out there and floating around, and they wanted to let us know. So we just wanted to raise the point that if there was this earlier fire, is it going to be taken into account that there may have been higher exposures.

MS. BLOOM: I did look at that, and it doesn't look like it'll change the coworker model, but it certainly would change the individual models.

MS. BASSETT: And then just one other issue, and I know you've heard us all talk about this before, but the enriched uranium, is the enriched uranium being taken into account? I know there's been some issues with the time line on that.

DR. NETON: This is Jim Neton in NIOSH. We're not taking the uranium into account during the covered period as defined by the Department of Labor because it's pretty clear, and especially -- I hate to keep relying on the Ferguson Report -- but it's very clear that it was natural uranium that was processed during that time. But we have relayed an e-mail or a memo to the Department of Labor and the Department of Energy suggesting that they look at other periods for enriched uranium activities based on some of the interviews that SC&A conducted with workers at the site.

MS. BASSETT: So they will be looking at some --

DR. NETON: Well, I can't speak for what they're going to do, but we have informed them that we have this information, and they should take this into consideration.

MS. BASSETT: Okay, our main concern --

MS. HOMOKI-TITUS: May I just clarify one thing?

MS. BASSETT: Oh, please.

MS. HOMOKI-TITUS: I just wanted to let you know. The Ferguson Report is going to come to you. The only thing we're trying to figure out is if our FOIA Privacy Act office is going to require it to be redacted. So it's either going to come to you tomorrow, or we're going to make it top priority to get it redacted and get it to you in a couple of days.

MS. BASSETT: Okay.

MS. HOMOKI-TITUS: We're not blocking the release of it. I just wanted you to know that you are going to get it.

MS. BASSETT: That's wonderful, great, thank you, we appreciate that.

Just with our constituents our main concern is that they've gone so far in this process and many of them are looking at documents that say enriched uranium. So we just understand that it would be extremely frustrating for them to have to go all the way back to begin again. So if we could just, I

guess, the fact that you're telling them to look at the enriched uranium is great.

DR. WADE: I guess, Jason, if I could ask, impose upon you to look at our communications with the Department of Labor and, if possible, if we could share them.

MR. BROEHM: Okay.

MS. BASSETT: Okay.

MR. GRIFFON: I think, I don't know, was that, that came up last meeting on the phone call that actually DOL was having a meeting the same day that we were about Chapman. And I don't know if there's any update the DOL can provide us on this call.

Lew, is that --

DR. WADE: I don't know.

Jeff, are you in any position to comment?

MR. KOTSCH: I'd have to check.

I think, Jim, I assumed it went to Carolyn or somebody else other than me.

DR. NETON: Actually the memo itself I think went to Pete.

MR. KOTSCH: I have to admit I don't know what the status of that is. I can check and

get back to the Board.

DR. WADE: Well, if it's appropriate for us to share that with our friends on the Hill, then we should leave that to others to decide.

MS. BLOOM: Just an aside on that, on the enriched uranium issue, the only thing that we've seen are those environmental samples in later years. There was a health physics journal that came out May 2007 that does have an article under the liability of U-235 to U-238 ratios. And I've just glanced at it so far, but it appears to indicate that those ratios are not very reliable.

Again, I think it's worth pursuing with DOE to find out if there's any other information there. In looking at this article my sense is that those ratios may not be very meaningful, especially at low levels, but that's probably worth pursuing as well, looking at that to see if that answers any more questions.

DR. WADE: Anything else?

MS. BASSETT: That's it from us for now.

DR. WADE: Thank you.

MS. BASSETT: Thank you. I'll be on until

about 10:00, so thank you, guys.

DR. WADE: John, belatedly, it's yours to begin.

DR. POSTON: Basically, let's see, there's four issues to address. Certainly, we've already heard the H.K. Ferguson Report needs to be discussed a little bit from last time. There was some discussion that NIOSH is going to look at the implications of the combined M and N exposure matrix, whether or not there was a special intake that should be added for incinerator exposure. I'm not quite sure about that. And then the fourth issue was whether or not the machinists' exposures were adequately addressed by the limited number of bioassay samples that were taken, that is, the 40 samples.

That's all I had on my hit list. If there's anything else that the working group members have to discuss, we probably need to put it on the list now. Anything else?

MR. GRIFFON: Well, I'm not sure there's much to discuss about it, but I do have specifically an action item was that NIOSH was going to give us an update on DOL's

investigation of this other time period, but I guess there's no information. So I'm not sure how far we can go with that.

DR. NETON: I'm not sure, Mark, that would affect our ability to make a decision here for this covered time period.

MR. GRIFFON: No, no, I understand.

DR. WADE: The work group has an interest, and we should keep them informed.

DR. POSTON: I was trying to focus on the things that are left to do and seeing if there isn't the possibility we could wrap this up so we could have a recommendation to the Board at the May meeting. That may be specious, but I think we're getting down to the end of this, of these considerations. I think that NIOSH and SC&A and the work group are all coming together reasonably well so I don't know exactly how to proceed.

H.K. FERGUSON REPORT

Maybe, Mark, maybe you could take a minute or so and talk about the Ferguson Report. I know you sent out an e-mail that covered it quite well, but you might summarize what you sent out.

MR. ROLFES: This document is in the site research database as well. It's available on the X drive in case no one had the opportunity to look at it yet. I would definitely encourage everyone if they haven't looked to quickly look through the document and see some of the pictures and some of the various operations.

This document is titled "The Machining of Uranium for Brookhaven Reactor". And it basically summarizes the entire process of the operations, describing the uranium rods that were sent in from Hanford to the Chapman Valve facility. It describes the building where the operations were conducted, the floor plan.

We have an updated map, the location of the incinerator, the location of every machine that was involved in the production operation, very detailed and intricate descriptions of each machining operation through the entire process, any shortcomings associated with that process and corrective actions that were taken, description of the machining oils and coolants that were used at each station, the health physics program and

procedures and regulations, as well as some correspondence documents.

Then we have the description of the fires that occurred, a description of the clean up and decontamination, and a description of the waste disposal following the completion of the project. Now this document also gives us quite a bit of detail about the first machining operation involving 200 slugs of uranium which were produced by April 15th, 1948. And it also indicates that at the maximum production rate they were producing approximately 1,200 slugs per day.

We've got the total source term, and we have a date for the end of the project indicating October 7, 1948. So taking what we have in this document in comparison to what we have assumed in our Technical Basis Document for dose reconstruction -- This just concerns that we're claimant favorable by extending what we're using for dose reconstruction by extending the time period that we're assuming that exposures occurred.

I guess if there are specific questions, we can get into those now, but --

DR. NETON: Mark, I might just want to add a couple things.

MR. ROLFES: All right, thank you, Jim.

DR. NETON: One thing that I know we're going to get into later is the furnace operations. And Mark indicated there is a diagram of where the furnace was, but there's also a picture and a fairly detailed description of the design of the furnace. It was sort of a homemade operation including the flow rates, the air flow rates through the furnace at the aperture, through the exhaust duct.

And also we have initial information about the number of times that chips were roasted or burned in the furnace. Looks like it was done during peak production, at least stated it happened twice a week. Also it was an interesting fact that they only roasted the fines, the grinding operation-type samples and not the turnings that were produced as a result of some of the lathing operations. So that limited the source term of the burnings a little more, but we'll be talking more about that. But I think there's enough information

there to have a pretty good discussion about the potential exposure of people involved in the furnace operations.

DR. MAURO: This is John Mauro. I guess I'd like to add a few items also. I agree with the characterization that Mark just gave, and Jim. And I think that there are aspects of this write-up that does change the way in which we, at least I have been viewing the exposure matrix.

And I think in fact the operations, the fire, the date of the fire, the incinerator, the air sampling program, clearly there was a lot more air sampling going on than we would have previously understood. And because you can see when you read through the report that each time a visit was made some air samples were collected. By the way most of which showed negative results.

The fire interestingly enough is referred to as a fire associated with the incinerator, and there are many aspects, without getting into them right now. When we're ready we will. There are many aspects of this report that are extremely important in

terms of fully characterizing what had transpired at that facility. And I think it's important that many of the elements that are contained within this report need to be discussed within the context of how they may affect the exposure matrix that has been adopted.

DR. NETON: John, I've got a question. I didn't recall that the fire was associated with the furnace.

DR. MAURO: Well, the reason I say that is on page 51, during one of the health physics visits that were taken periodically -- This is the health physics visit that was taken on June 1st. Do you have a copy of the report in front of you?

DR. NETON: Yes, I do.

DR. MAURO: They talk about, it's on that particular report. Apparently, there are these four or so visits that were made, and this was made in the first visit on June 1st. And if in that letter regarding the sort of status report of the program where they make mention of May 23rd as being the date of a fire, and in that very same write-up, on

number five they use the words "air samples taken at the roof during the course of the fire in the incinerator." That sort of struck me as strange.

DR. NETON: I think in the course of the fire in the incinerator. I mean, that was the whole point of the incinerator was --

DR. MAURO: That's what I didn't understand, the fire in the, this is one of the examples of the things that I wanted to air out a little bit. This is one of the letters where they talk about the May 23rd fire. And then a little further on on the page they use the term -- and I actually wrote a note that said this sounds strange -- they use the term "course of a fire in the incinerator," and they talk about that fire. And I guess that led me to think that what does that mean, a fire in the incinerator?

DR. NETON: I think though if you look at page 40 there's a pretty good summary of what the fires, there were two fires --

DR. MAURO: Yes.

DR. NETON: -- which both turned out to be minor.

DR. MAURO: Yes, I agree.

DR. NETON: But neither of them refer to the incinerator. I think the incinerator by nature is a, I think what the intent of 51, at least my impression was that while they were burning chips.

DR. MAURO: Okay, I understand.

DR. NETON: So that's how I read it.

MR. GRIFFON: That's how I read it, too.

DR. NETON: At any rate I think we can talk about that more later, but I think that's what they were talking about.

DR. MAURO: Well, I wasn't, at this point there are a lot of elements like this like page 51 that I think we need to air out a bit regarding what the implications might be for the exposure matrix. I think some of the most important things that emerged for me was there was obviously a very, very strong health physics program. They took it very seriously, but at the same time, and there were air samples collected.

And there's a lot of feedback that says that very little airborne activity, contamination was there. But then on the

other hand we do see some discussion of the date of the fire being the 23rd. I'm not sure what that does to the matrix. And it also means to me that maybe the single most important thing that struck me is that it may be that the June 11th samples, each of those four samples, the June 11 samples may not have been taken because of the fire.

In other words if the fire occurred on the 23rd and then a visit for health physics coverage or update was performed on June 1st, and then the urine samples were not taken until June 11th, it may be that the June 11th urine samples were just part of the ongoing periodic urine sampling program.

MR. ROLFES: John, let me stop you right there. I have a letter dated January 27th, 1949, from George, I'm sorry, it's from B.S. Wolfe to George Fox, and I'll read the first paragraph here.

It says, "In response to your letter of January 19th, 1949, the following laboratory results have been reported on the urine samples collected from the seven employees involved in the fire fighting episode last

June."

DR. MAURO: Okay, so now the thing that's interesting is though that what we have is the 23rd to the 11th. So now the time period between when the fire occurred and when the urine samples were taken is substantially longer than what we were discussing earlier. I'm not quite sure what the implications of that are in terms of what intake should be assumed.

I still have these conflicting perspectives. One is I still agree that there's a point where the dust loading is so high that you really can't have protracted exposures. And that was one of the reasons why I was saying that it doesn't seem reasonable that you could have had exposures much earlier than June 10th and be responsible for .08 milligrams per liter on June 11th.

So we have that, but then we have this May 23rd fire, so what the implications are is that I don't think the June 11th data and the .08 milligrams that we clearly observed is necessarily related in any to the fire except maybe they collected the sample because there

was a fire. But I don't think the levels that were observed were due to the fire. It doesn't seem to make sense.

Do you see where I'm going with that?

DR. NETON: No, I don't. I don't think that the levels observed were not necessarily due to the fire.

MS. BLOOM: Maybe I could jump in for a second.

DR. MAURO: Sure, help me out.

MS. BLOOM: Because I think that these were workers that were involved in the clean up as well, and so this was probably a chronic exposure rather than an acute exposure that occurred. It's still, in looking at the data and playing around with different dates and different scenarios, that June 10th still gives the highest intake in doses for the coworker scenario.

But now if you're looking at the individuals you would use that data a little bit differently. While my sense is definitely that this was a, you actually had two fires during that period, one was a much, much smaller fire, but you had clean up ongoing

after the fire. And so you have really a chronic exposure period I think, not an acute. Although in fitting the data, and because we don't know exactly when that period was, it's more favorable to assume an acute.

But still I looked at an acute on the 23rd versus an acute on the 10th with the other chronic period under it, and I still get higher doses for that June 10th assumed date even though we now know that the 23rd is a more reasonable date for that.

DR. NETON: Not to confuse here, but that's when we applied a coworker model assuming that the person was chronically exposed to the 70 MAC operation in addition to an acute fire.

We reconstruct a dose for the person involved in fighting the fire differently. And that's what Cindy alluded to is that that individual dose calculation would go up for someone who only fought the fire if there was an acute exposure on the 23rd and we had a sample on the 11th.

MS. BLOOM: (Unintelligible) data and the fire date.

MR. GRIFFON: Can you help me out, Cindy?

How did you determine, you just said one of the fires was much smaller? How did you, I'm reading what Jim was just quoting from which says that there were two fires, both of which turned out to be minor.

MS. BLOOM: If you look at -- I'm sorry, I've had a week of it with the floods and lack of phone and so my brain's not totally here today. But there's the can and there's a second one where the turnings caught on fire.

DR. NETON: The first fire -- and we're looking at page 40 -- is a bucket of fine grindings where they had covered with water and the water went below the top surface, and they ignited. Then they put this out with an extinguisher, bicarbonate of soda and sulfuric acid.

The second one was a ten-gallon steel drum filled with oil fill turnings. They had as a practice of, none of these turnings were roasted by the way. The drums were filled with oil and shipped directly, I think, to Oak Ridge. But while they were spot welding the top on, some of the turnings caught fire in that drum. And then it said the cover was

removed and the fire was easily extinguished with flaked graphite.

So these do appear to be two fairly minor fires. I mean, we've had images thinking all along about these huge fires engulfing large portions of the plant. In fact, they were both confined to either a drum or a bucket.

MR. GRIFFON: Well, that was my next question, Jim. I thought, and maybe I'm wrong, but I thought there was response from the town on this fire that we were thinking about --

DR. NETON: I don't think we have evidence that happened.

MR. GRIFFON: Never confirmed that or --

MS. BLOOM: There was not, we've seen no information. I know [Name Redacted] was looking into that as were some of the folks from Chapman, but they could find nothing that indicated that the town responded. In fact, they were looking at other --

MR. GRIFFON: Yeah, I know they were looking at the firehouse records and stuff.

MS. BLOOM: -- and they found nothing that

indicated that they'd come in.

DR. NETON: This document is kind of interesting in the sense that it's a retrospective evaluation of this entire project from start to finish. And it seems to me that this person who wrote it, Kemmer and Musgrave and Fox, were fairly well involved in this process. I mean, it's amazing the amount of detail they have. But, see, I don't know that, the fire department may have come to Chapman Valve at various times, but it does not appear that it would have been to these two small fires.

MR. GRIFFON: So out of these two -- to go back to the original question -- so out of these two fires you think the first one mentioned on page 40 here is the larger? I mean, I'm trying to, I didn't see a date for this second one I don't think and --

DR. NETON: No, we do have a date.

MR. GRIFFON: Oh, you do?

MS. BLOOM: It's in another memo. It's a handwritten note at the bottom of a memo that, I think we provided that last time.

MR. GRIFFON: Yeah, you probably did.

DR. NETON: It's also mentioned in this report somewhere. I've forgotten where it was, but they were both in late May.

MR. GRIFFON: So they both occurred before the June 11th sampling.

MS. BLOOM: Right. They had a bad May. We're having a bad April.

MR. ROLFES: I believe later on in the H and K Ferguson document as well it does refer to the larger fire on the 23rd is the one that was responsible for some of the contamination in the shop as well.

DR. NETON: That one would have been the ten-gallon steel drum.

MR. ROLFES: That was the first one on the 23rd which --

DR. NETON: That was the one with the chips in a bucket near the grinder.

MS. BLOOM: Right.

DR. NETON: Not the chips but the fines.

DR. MAURO: That would be the write-up that's on page 51 of the Ferguson Report? I think that special report that was sent to Musgrave by Mirkle*, and that was one of those --

MS. BLOOM: Right, and that's where he says, gives the date of the first fire there.

DR. NETON: May 23rd.

DR. MAURO: Yeah.

DR. NETON: And that would make sense because they apparently weren't successful. They tried to put out that first fire, or that fire with the bucket, with water and it didn't do very well.

DR. MAURO: You know what was interesting is on that memo, item number two says, "Air samples taken in the shop showed no detectable contamination." Now it's not really clear when, if the fire occurred on the 23rd in this write-up I'm looking at on page 51, the visit was made on the first. So apparently there are these periodic visits made.

I'm assuming that that's when these assessments were performed, during these special visits of the health physics crew, and when they collected samples. They took swipes of various locations, and they investigated the status of operations in this two-page report. But one of the items they mention is these air samples.

So I guess when I look at this I notice that that happens repeatedly. During each one of these visits apparently some air samples were collected, and there was no detectable contamination. I think that's an important piece of information. And that information, especially if we can get some idea of how they took the sample. In other words what the lower limit of detection was.

Because what this would help do, quite frankly, is if we could somehow say that, okay, for each of these visits air samples were collected, and we had some information regarding what the lower limit of detection was for the sampling analysis that was done, and then somehow juxtapose that, those air samples that were collected, and these were taken in the shop areas, you know, where the activity was going on.

And juxtapose that to the default assumption of 70 MAC, I think that it would go a long way as independent confirmation that your choice of the 70 MAC as being the chronic exposure to which everyone experienced, it would certainly be bounding. And I think

right now your choice of the 70 MAC can be argued as certainly bounding.

DR. NETON: John, I was looking at it from a slightly different perspective. I think, you know, I don't know where these air samples were taken, whether they just stuck them in the middle of the shop area or what, but we've got the specific process operations going on presumably while they're taking this air sample. And so for us to bound the workers, we need to have a better feel, or we need to focus on what the workers were experiencing at these operations.

Now one thing that struck me as supporting our case that 70 MAC is bounding is, and I think Mark put this in his e-mail, that all of the operations that involved grinding and turning and such were all done with liquid coolants. In other words they were not just dusty operations. They were cooled by either oil or by water-based coolants which would tend to keep the dust levels down.

And, of course, if you look at reports like, not the Adley one but the Harris Report,

they characterize exposures depending on whether they were cooled with oil or not. And, of course, the ones that were oil cooled or liquid cooled are much lower.

Secondly, I think it struck me that I think these processes were by and large ventilated. Liquid cooled operations which are keeping the dust levels down in addition to ventilation which would explain why the general plant air is clean. It would also help support the fact that the operations themselves, the process-specific operations, were also on the lower end of the airborne scale.

DR. MAURO: I came away with the same perspective on that also. That is, most of what you read here confirms that this operation was controlled. Even though it was an early operation, it had a great deal of controls, the use of the coolant and the fact that they had such health physics oversight.

INCINERATOR EXPOSURE

The issues related to the fire, I hear what you're saying. That is, your model for the exposed individual would be bounding. I

guess the area that is left a little bit uncertain still is when I read the incinerator section, you know, twice a week the incinerator was used for fines.

And I think that that also is an interesting story because as you pointed out, the turnings were not included which would be the larger pieces, and it was mainly fines. Now, I'm not quite sure what the implications of that are in terms of does that mean you have reduced potential for airborne exposures entering into the operating areas?

And I can't really tell from the description of the incinerator whether or not the removal -- as you know from reading these other reports, Harris and Adley, it's when they're loading and unloading the incinerator that is when you get quite a bit of airborne dust. But most of the attention in this write-up, interestingly enough, was not, you would think that given the sensitivity they had with these issues, it was not with any of the airborne dust that may have been generated with loading and unloading, it was more associated with the discharges to the

atmosphere and the contamination of the roof.

So I guess indirectly, I mean, one could say that they really didn't even speak toward what type of dust loadings were associated with the loading and the unloading of the incinerator. And they describe a design with an opening, so I can't really tell from reading that that perhaps -- and they also describe a hood. Whether or not the nature of the operation and the design of the incinerator helped to reduce the potential for airborne dust loading within the facility.

Clearly, there was a problem with discharges to the atmosphere that they were very concerned about and the contamination of the roof. I don't know whether you folks have any sense for this particular incinerator, the picture. When I look at the picture it doesn't tell me anything.

DR. NETON: Yeah, John, I've got a few thoughts on that. I was pretty amazed that how small it was first of all, and it was kind of like how Cindy characterized it, a small furnace. I think it was a 15-by-15 inch square aperture to insert the material to be

roasted.

DR. MAURO: Yes.

DR. NETON: On top of that if you read further, there was a 500 linear feet per minute flow rate going through an eight-inch exhaust duct connected to the furnace. That is a pretty high flow rate, and I'd forgotten that calculate the capture velocity at the face of the furnace, but it's a pretty sufficient capture velocity. So I think the idea that this furnace was spewing exhaust into the room would not have much credibility. I think that --

DR. MAURO: You know, I hear you, and now so you're saying that when they were loading underneath this hood which had the capture velocity, that would be operating during the loading and unloading operations, not just during the actual --

DR. NETON: I don't know about, I can't guarantee that, but what I'm saying is while it's burning there's simply, I don't think there's much concern about the material being vented into the atmosphere --

DR. MAURO: No, I agree with that. It's

clear that --

DR. NETON: To get into the loading and unloading operations, I think one needs to maybe look at the scale of the operation. I did a rough calculation, and this is very rough. But we have exact dimensions of what kind of grinding and turnings were done on each of these slugs. I mean, it's amazing detail.

They'd come in with 12-foot long bars, one-inch diameter, and they describe exactly how they were cut, and how they were lathed down to within certain specifications. They turned down these bars by .1 inches. It was a one-inch diameter and a little button on the top. If you calculate how many fine materials would be ground off of those bars at peak production which was 1,200 slugs per day, you'd get something on the order of every two days -- and this is during only that four-month period where they did this -- you would get something on the order of -- I don't have the calculation in front of me, but something around, I think, five kilograms of fines generated every two days.

DR. MAURO: How does that compare to the magnitude of the fines that were processed, let's say, in the other reports we looked at where we saw these high levels of handling? Because I think you're zeroing in on really some good quantitative arguments that could be made.

That is, if you could show that the quantity of fines that were being consumed or roasted at this facility were substantially lower than the quantity, let's say, that was described either in the Harris, Adley, I guess, yeah, those two reports, there would be, what that would help do is to sort of rule out that you really could not have a situation where you can get dust loadings of the types that they observe, for example, in the Adley Report.

DR. NETON: I haven't looked at that, or we haven't to my knowledge, but I think we could even take this one step further and say uranium's a pretty dense metal so we did a quick calculation. If you have that mass of fines every two days, and you're going to put it in a furnace, what does that correspond to

in terms of volume?

Uranium is pretty dense. It's about 16 grams per cubic centimeter. Although I'll agree, if you have fines, it's going to be a little fluffier than something like a pure metal. But even U-03 powder is about, I don't know, 15 grams. If you can do that calculation, you end up with something, and this is a rough calculation, but say about a half a liter of fines generated per two days.

You're talking about something that is like the volume of a large 16-ounce Coke bottle.

DR. MAURO: Yeah, yeah.

DR. NETON: And so it's hard for me to envision if you roast things that small a volume every two days that you could generate 70 MAC continuous or something --

DR. MAURO: Yeah, or something, yeah. That would actually affect, I mean, you couple that up. I'm leaning in that direction also. The amount of additional airborne dust loading associated with the fines from incineration intuitively would seem to be small and not really change a time integrated intake at all

because of the assumption you're using is 70 MAC.

What would be the clincher would be, because you see looming in the background is the fact that there were these very high exposures associated with the loading and unloading of incinerators at these other large facilities like out at Hanford. And if it could be shown that, well, the magnitude of, the scale of the operation was such that the amount of material that was handled, loaded-unloaded, at Hanford dwarfed the amount that was being handled here, I think that would be the end of the story.

DR. POSTON: Well, this is where I've been trying to figure out where we were going. Are we going to turn this into a research project or are the assumptions that have been made of continuous exposure over 16 months and so forth, are those the bounding kinds of calculations that we really need to do to, and have been done to make a decision here? I mean, we can suggest a lot of different things that need to be done or could be done, maybe not need to be done. I'm trying to understand

exactly where we're going here.

MS. BLOOM: I think we've already looked at the general inventory amounts that went through those different facilities. I'm not sure that the information is readily available on the actual amounts incinerated per day.

DR. MAURO: That's a good point. What you're saying is throughput alone would be a good metric of scale potential for fines associated with the loading and unloading as opposed to going directly to the amount of material that was incinerated.

DR. NETON: And qualitatively I'm looking at some of the notes that Cindy put out on that last document that compared a lot of different processes, and when you look at the oxide burnings, they're talking about shoveling oxides from trays into barrels, some oxides still red hot, shoveling, I mean, their shoveling this into large barrels.

DR. MAURO: Yes, yes.

DR. NETON: It indicates to me that it's fairly larger.

DR. MAURO: Yeah, absolutely.

DR. NETON: But, you know, I just still

think if you're shoveling something that's a liter or so --

DR. MAURO: You're using a spoon.

DR. NETON: I don't know about that, but first of all I think that when they're going into the furnace, these things were always kept under, it appears from the write-up, under some type of a liquid form, whether it's water-based coolant or oil, to keep the fires from happening in the plant. I don't think that they actually dried these things off before they put them into the furnace. So the loading operation I wouldn't think would be a problem.

And unloading would be, in my mind, the only potential here for a large exposure. And if you're unloading a small tray, and we even have the dimensions of the tray. I've forgotten what it was, but it's like a two foot by something tray. Well, it'd have to be smaller than two foot because the opening to the furnace is only 15 inches. These are pretty small trays.

I would be surprised if they would actually roast more than one tray every two

days. And we don't have a quantitative nail on this, but I think qualitatively it certainly points in the direction of 70 MAC continuous for the entire week is, entire time period is pretty favorable.

DR. POSTON: Yeah, I agree. So where do we go from here? What needs to be done?

MR. GRIFFON: I was just going to ask you a question on the inventory.

Cindy, you just mentioned the inventory. Did NIOSH, did anyone check this H.K. Ferguson document with your site profile? Is it consistent with the, I know they mentioned some numbers in the beginning here, page five to seven or eight, I think.

MS. BLOOM: I don't know that I had an exact inventory in the site profile. I had a guesstimate in that last document that I sent, and it looks like I was a little bit low. These numbers are a little bit higher, but not, I think they're within a factor of two of what I put out in the last paper based on estimates of the source term and the Brookhaven reactor. So they're similar.

DR. NETON: I also think if one looks at the

extended time period here, almost all of the operations of the grinding of the slugs or machining of the slugs occurred, it looks to me, it's over about a four-month period.

DR. MAURO: Yes.

DR. NETON: And so maybe there was some ancillary grinding and machining going on, but it would have been even a lot less that, what I had just calculated was for peak production of 1,200 slugs per day, and it drops off dramatically on either side of that. So then you end up with an equivalent air concentration of something like, pick a number three or four times that that we're assigning during the peak period.

MR. GRIFFON: And maybe, I don't know if, well, I mean, the question, John, I think you had this question of how does the date of the fire affect, I assume if you know individuals who were involved in this, and I think Cindy just said that it might affect individual dose reconstructions where we have their individual data, but the coworker model, the one you currently have on the table, notwithstanding my question of M and S, would be the most

conservative. Right?

DR. NETON: I think that's correct.

MS. BLOOM: Right.

MR. GRIFFON: I mean, I think that M-S mixed issue is a, I don't think that's an SEC issue necessarily anyway. I don't know if you've had a chance to assess that, but --

MS. BLOOM: I did take a look at that. I can talk about that if we, I don't know if we want to finish up with this first.

MR. GRIFFON: Yeah, I think we do.

DR. POSTON: Anything else that we need to discuss in here?

MR. GRIFFON: I mean, John, do you have any follow-up questions on that?

DR. MAURO: No, I --

MR. GRIFFON: I think the date thing, as far as the date of the fire being earlier, my personal review says that it's not going to affect that coworker model at all. So I don't think it makes a difference there.

DR. MAURO: Okay.

MR. GRIFFON: But I don't know if you guys have looked at that.

DR. MAURO: No, we haven't. We just noticed

it when reading it, and that's why I put it out in my e-mail as something we needed to talk about. But we did not do any analysis though.

DR. POSTON: Anything else we need to discuss on this issue?

(no response)

M AND S EXPOSURE

DR. POSTON: Mark, you make a comment that you didn't think the combined M and S type exposures is an SEC issue, so do we even need to talk about that?

MR. GRIFFON: Yeah, I don't think we need to necessarily resolve it on the call. My quick look at it said that it might have affected the intakes. It might have increased them slightly higher, but Cindy may disagree with that. But I don't think that's an SEC issue so we can --

MR. ROLFES: I think it's safe to say also that any increase in intakes would be adequately captured by the extended production period that we've already assumed in our Technical Basis Document as well.

MS. BLOOM: Well, I think the answer's

really quick. I did a, Mark, you said you tried to look at this, and so you know how many different scenarios you can actually have to look at in order to look at it. By the time you look at 20 different organs and 50 years and, it became a challenge. But I figured out a way to do a rough and dirty calculation for 50 years for all the organs and do that quickly. And I apologize for not sending that out.

But in looking at that it looks like, except for the first year, the doses are going to be higher in the later years for pure Type-S. And that's because your dose conversion factors combined with your intake retention factors are going to produce the highest doses in your organs. Now there's some exceptions for exposure periods less or of a year or less. And it might be in between there into that one-to-two years range. You know, to do it that finely is a tough job.

But in looking at that, the worst case, I think, was for the liver. And I looked at the first year dose and that's about ten percent lower for pure Type-S than it is

for that combination M and S. But I would say that for a person where you're only considering that first year dose, your probability of causation is going to be less than one percent.

So in terms of changing the outcome of any claimant it's just not going to happen. And so as a way to expedite claims, I think it's still reasonable to use either a Type-S or a Type-M, that is, and try to mix up your different types.

DR. POSTON: Okay?

MR. GRIFFON: Yeah, I mean, I'll accept that, and we always have the assumption that NIOSH is going to use the most claimant favorable approach given the organ and whatever, organ of interest.

DR. POSTON: Is there any more that we need to talk about on the special intake for the incinerator or do we think that that's bounded by the assumptions that are already used? Do we need to discuss that anymore?

(no response)

MACHINISTS EXPOSURE

DR. POSTON: The last issue I had was

whether or not the 40 bioassay data points that we have actually do cover the machinists. I think it was Mark that pointed out that -- not Mark, I forget who it was now.

MR. GRIFFON: Yeah, it might have been me.

MR. ROLFES: Mark, Mark Rolfes. There were 40 bioassay results that were taken during the highest production rate period between June and October. It appears that they were sampling these individuals at the time period where there was the highest potential for intake of uranium. And also, these 40 uranium urinalysis results were taken from a population of workers of approximately 70 individuals as documented in this H and K Ferguson Report.

MR. GRIFFON: Right, and I was asking about whether we felt that the sample, and I would say the three samples were good enough to bound. Because my argument was that, or question, was whether the highest potential, potentially exposed worker was monitored sufficiently that we could bound exposures. And, you know, I see three machinists that were monitored over this time. It's 40

samples, yes, I agree. But it was distributed amongst various types of job types. So that was the question really.

MS. BLOOM: Right, but it doesn't look like you have a lot of, I mean, just looking at the setup I wouldn't say that there'd be a lot more than three machinists. You might have six maybe.

DR. NETON: In fact, I looked through the film badge records, and I found there were about three or four other machinists, but their film badges were much earlier in the time period than these guys were who were working during the 1,200 slug per day peak production era. That was the way it appeared to me.

And then secondly, I think this exercise we've done by looking at the 70 MAC air that was derived from the bioassay data and doing sort of a sanity check and saying are we comfortable with the fact that the answer we got from the bioassay seems to be reasonable given what we know about the plant. And I think our previous discussion this morning seems to indicate to me that, yes, the

70 MAC is a fairly reasonable upper bound that was produced by the bioassay results themselves. I can't, you know, given the fact that we had the liquid process and the ventilation over the machines and that sort of thing.

MS. BLOOM: Mark, I don't know if you had the time to look at the layout of the machine shop, but it looks like there's only one centerless grinder. There's only one milling machine. So it doesn't look like you'd have that many more workers.

MR. GRIFFON: Right, right, I agree with the, I mean, I looked at the film badge sheets also, and it did look like maybe eight or ten at most were in the machine grouping. And I think I agree with Jim's other statement that the, given our other general uranium information that you compiled and looked at. I think that also supports the argument for the 70. I don't think I have any more questions on that.

I think, you know, I still say it's fairly limited for those jobs, but given you've got documents now that support that it

was definitely not open air machining. You have the oils or, you know, over the machining, and you've got other general documents that suggest you're in the right ballpark if not very conservative. So I think it's okay.

DR. POSTON: Anything else?

(no response)

DR. POSTON: I'm at a loss as to what's the next step. Perhaps Dr. Wade can help me here since I'm a rookie.

MR. GRIFFON: Can I ask one more thing on this Ferguson, just to close out the Ferguson thing for myself. I found this and I know, I was looking through some other documents I have on terminology. But there's a reference to TX metal. Can anyone help me out there what that means?

MR. ROLFES: Mark, this is Mark. That appeared to be the metal that wasn't, it appeared that it might have had some air in it because its density wasn't the same as the other uranium that was sent. And it said that -- oh, wait, I take that back. The TX metal was sent along with the virgin rod material,

as they called it. The TX metal was from other uranium that had been, it describes it pretty well in the H&K Ferguson documents, but it appears to be metal that had been machined. And it was scrap that was, I guess, put back into a rod, and it didn't have the, I guess they weren't able to re-melt it into a solid piece as they were the virgin material.

MS. BLOOM: The quality just wasn't as good.

MR. GRIFFON: So there's no chance that this was, I mean, I was trying to think if that TX in any way stood for a, I mean, there's no chance that it was other contamination in this. It's natural uranium by all indications, right?

MR. ROLFES: Yes, correct, it's not recycled uranium to our knowledge. It just appears to be metal that didn't have the same specifications as the virgin rod material.

DR. MAURO: Yeah, on page six the actual wording says TX metal was reported to have been extruded from ingots reclaimed by re-melting scrap and to be somewhat inferior to virgin metal in chemical, physical and nuclear properties. I guess, you know, it would

appear that that means that their only concern with the TX metal was that it did not have the same purity level, but there was no implication that it had any, that it was either recycled or enriched.

MR. GRIFFON: That was the question, and it just seemed to me this cohort, they didn't know what TX metals, if it had a definite definition, if anybody knew that. I guess it might just be reclaimed from scrap. I don't know.

MS. BLOOM: I think the codes change from site to site. While they're somewhat similar, my experience has been that it's hard to say that the code at one site means the same thing at another.

MR. GRIFFON: Oh, I agree, yeah.

MS. BLOOM: You usually start out thinking that and then sometimes I'm surprised.

DR. WADE: John, this is Lew. If you're ready, I could begin to answer your question.

DR. POSTON: That'd be fine. Go ahead.

PRESENTATION TO THE BOARD

DR. WADE: Let me start by verifying some facts, and Jim or Mark, I depend upon you for

this. It is my recollection -- and tell me if I'm right or not -- that the Chapman Valve evaluation report is out there and has been presented to the Board.

MR. ROLFES: That's correct.

DR. WADE: And the Board then asked SC&A to look into the issue and had a working group formed. What would happen, John, again, the way the Board and its working groups have done its business is that the working group doesn't bring a formal recommendation to the Board.

But what would happen is we have an agenda spot set aside for Chapman Valve SEC petition. The opportunity would be there for the petitioners or their representatives to speak if they would like. And then I think the working group would provide its thoughts to the Board, not in the form of a formal recommendation, but the Chair, or in your case someone that you would designate, would say to the Board we've looked into these issues. Here's what we found.

There'd be an opportunity for SC&A to comment if the Board would like to hear from SC&A. There'd be the opportunity for a

minority report if whoever's making the presentation if another work group member had other thoughts that they would like. Enriched by that, that is, petitioners' comments, working group report delivered by a representative of the working group, minority reports if appropriate, comments by SC&A.

Then the Board would go back to the petition and decide how it wanted to proceed. It could decide it wanted to move forward and make a recommendation on the petition. It could decide it wanted more information. So that's a long answer. The short answer is that the work group needs to be prepared to make a fairly succinct and as much of a consensus report out to the Board as possible next week.

DR. POSTON: Okay, now you brought up the major problem for me is next week I'm going to be, as we say, behind the fence. That is, when you go to some of these DOE sites, you don't have any way to communicate. So someone on this work group will have to represent the thoughts of the work group to the Board because I won't be even able to communicate by

telephone.

DR. WADE: Well, Chapman Valve for the record is scheduled for next Thursday, May 3rd, at 4:00 p.m.

DR. ROESSLER: John, this is Gen. I'd be willing to make the presentation as long as you have some time this week to work with me on it.

DR. POSTON: Okay, I should have some time.

DR. ROESSLER: Okay, I have to leave on Sunday, so I'd have to work on it before then.

DR. POSTON: Okay.

DR. WADE: I also think good practice, particularly given this very special case would be if all of the working group members could have an opportunity to see it either to say they agreed with it or to prepare to make some sort of minority statement if they wished. I don't anticipate that; I'm just leaving open the possibility for good practice.

So if John's and Gen's sort of report could be in a form that the other work group members could see it and have an opportunity to comment or prepare comments for real time

delivery, I think that would be a good thing.

DR. POSTON: Okay, we could try to get it done this week since Gen said she had to get it done this week.

I guess, Lew, the other thing is based on what I've heard one would lean toward this is not an SEC situation, that NIOSH seems to have the information necessary to do the dose evaluations. Is that the next step? Is that what we're going to talk about?

DR. WADE: Well, I think now again you would need to frame your thoughts with Gen and now you've told the rest of the work group what your thoughts are. Awaiting other detail there could be a discussion of that now, and you could see if you had consensus for that. Others might want to wait to see more formally what you have to say, but again, I think that would come as comments from the work group. SC&A would have an opportunity to comment, and then the Board would pick it up. So I think it's quite reasonable for you to give a sense to the work group of where you think this is going and see if you have consensus of your work group.

DR. POSTON: Okay, well, based on the discussions that we've had in the last three meetings, it seems to me that the report to the Board would indicate that we believe that with their conservative assumptions of chronic exposure over 16 months and then bioassays, they have the ability to estimate the doses sufficiently for this purpose, and this would not be an SEC issue. So that would be, that's how I see it. And if there's a dissention, I guess we need to know about it or would like to know about it.

Anybody want to speak to that?

MR. GRIFFON: I agree. For the time period in question in this --

DR. POSTON: Right, right, only for the time period in question. I'm not --

MR. GRIFFON: I just think we might want to say something to that and maybe, if possible, get DOL to give us a report in May because I know that's one question that the Senator's office has had, ongoing questions about. So I think we need to make sure that DOL is on top of this, and we are researching this. It's not going to drop off after this petition's --

DR. POSTON: Okay, so let me make sure I understand, Mark. So what we're saying is for this time period, the 16-month time period that we've been discussing, you're in agreement.

MR. GRIFFON: Yes.

DR. POSTON: But the enriched uranium and all the other stuff raise other issues that need to be looked at by --

MR. GRIFFON: It's this question of whether there were other operations prior to or possibly post but more likely prior to this time period.

DR. ROESSLER: John, I think it would be helpful if you state the dates for the record of this 16-month time period.

DR. POSTON: I'm going to have to dig through my paper to do that.

DR. ROESSLER: I think I have it here, and let's see if Lew agrees. I think it's January 1st, 1948 through December 31st, 1949, and then I'm not so clear about this, but then there's another date on here, January 1st, 1991. I don't think this really goes as part of it.

MR. ROLFES: Gen, this is Mark Rolfes. I

can clarify the dates for you if you'd like.

DR. ROESSLER: Okay.

MR. ROLFES: The current 16-month time period that we're talking about was the assumed chronic intake and exposure time period associated with the uranium machining operation which was conducted from January 1st, 1948 through April 30th, 1949.

DR. ROESSLER: April 30th, okay.

MS. BLOOM: That's our assumed end date. The DOE assigned dates of '48 to '49 for the operational period, the AWE period.

DR. ROESSLER: Okay, I think we need to have that on the record.

DR. WADE: I'll ask Jeff Kotsch. Jeff, are you still with us?

MR. KOTSCH: Yeah, I'm here.

DR. WADE: The work group is asking that if possible, DOL covers the status of this during their program update or in real time during this discussion. Can this serve as adequate request from the work group to DOL to do that?

MR. KOTSCH: Yeah, because I'll be there next week, and I want to make sure I have at least whatever the status of this, of the

review is.

DR. WADE: Okay, thank you.

DR. POSTON: I've heard from Mark and Gen. How about Brad. Do you have anything?

MR. CLAWSON: Yeah, I was just listening to Mark and you, and I just guess I need a little bit of clarification because one issue that's still raised with me is the enriched uranium sample. But from hearing what Mark said, that isn't really a part of this SEC. Is that correct?

DR. POSTON: Yes.

MR. CLAWSON: Okay, so we're not just totally dismissing the enriched uranium samples that were found, right?

DR. POSTON: Right, we're not dismissing it.

MR. GRIFFON: That along with those interviews, I guess the one interview really, that SC&A did, and we're going to look into the possibility of whether operations --

MR. CLAWSON: Okay, then that's --

MR. GRIFFON: -- DOL is looking at that.

MR. CLAWSON: Okay, that was my only thing because as we've found at many of these other sites, there's a lot of interesting stuff that

came in and went out that really weren't documented that well. But this is just for the SEC petition pertaining to that time frame that we had discussed, correct?

DR. POSTON: Correct.

Mike, are you still there?

MR. GIBSON: Yeah, I'm still here.

DR. POSTON: Do you have anything you want to -- are you okay with what we're doing?

MR. GIBSON: Yeah, pretty much, I'm like Brad. I just want to make sure we don't let, you know, we've take into consideration the workers' perspective and don't let that fall through the cracks even though it's not part of this process.

MR. GRIFFON: Actually, one more question, John. As a refresher to me, and I'm glad you brought up the time frames, Gen. The 16 month was my focus, and I think most of our focus. But '91 through '93, can someone refresh my memory of how, I'm sure it's addressed in the site profile, but I just haven't looked at it in awhile. How are you doing dose reconstructions for that time period?

MS. BLOOM: Why are you picking '91 to '93?

MR. GRIFFON: I don't know. It says '91 to '93 in the evaluation report. Am I wrong?

DR. NETON: 'Ninety-one to '94, I think is, oh, through '95.

MR. GRIFFON: I'm looking at page seven of your evaluation report I thought.

MS. BLOOM: Okay.

DR. NETON: And a proposed class definition for this period was through December 31st, '49 and from January 1st, '91 through December 31st, '93.

DR. ROESSLER: That's what I'm looking at so I need clarification on these dates.

MR. ROLFES: I believe in our evaluation report we had delayed the later time period during remediation for a separate evaluation report.

MR. GRIFFON: You did, okay.

DR. MAURO: This is John Mauro. There was a time period where there was a remediation phase which was around the '94, '95 time period which was delayed. But then there was another time period before that was prior to remediation, but there was residual radioactivity prior to going into the clean-up

operation.

And there was a characterization done as part of the, I think it may have been part of the FUSRAP Program, and there's lots of data. That is, they got a lot of information of what the residual radioactivity was. I believe they gathered that data in the 1980s as part of the characterization program for clean up.

And that data, if I remember, is the data that is being used for the purpose of dose reconstruction for claimants that may fall in that time period. I think it was '91 to '94. I'm sort of doing this from recollection because we haven't looked at that in quite some time. But I remember when I reviewed the evaluation report I remember indicating that that time period seems to be fairly well covered with good data because it was a time period that had data collected in the, I guess, late '80s.

MS. BLOOM: It was in 1990s, and so that's the data that we've used for the residual period because we didn't have this earlier data which I will look at this again. But the

'94 and '95 were the clean-up points. I'm looking at the site profile now, and it's jogging my memory. But that was the clean-up period.

Now, I don't believe, I believe I looked at this before, and my recollection is that there were no Chapman employees on site or no claims for Chapman employees at that time. I think they were all offsite by that time.

DR. WADE: So let's have a concise statement by NIOSH of the time periods and what this work group is being asked to make a recommendation on.

Mark?

MR. ROLFES: Yes, let's see. I would have to pull up my evaluation report. I apologize.

DR. WADE: Why don't you do that.

MR. ROLFES: The main dates of discussion here are January 1948 through April 30th, 1949, which is what we have assumed in our Technical Basis Document. The actual covered employment period as covered by DOE is 1948 through the end of 1949. I would say that this discussion relates to the uranium machining and clean up,

1948 through our assumed date of April 30th, 1949.

DR. WADE: What about the dates in the '90s?

MR. ROLFES: The dates in the '90s, I apologize. I'm slow here.

DR. WADE: Take your time.

MR. GRIFFON: Hey, Mark?

MR. ROLFES: Yes.

MR. GRIFFON: Can you tell us what document you're looking at, too, so we can all be looking at it, too? I'm looking at C-H-A-P-M-E-V-A-L-R-dot-pdf. And I'm seeing different dates and getting confused here.

DR. ROESSLER: That's why I brought it up.

MR. GRIFFON: Yeah, thank you, Gen.

DR. ROESSLER: I'm looking at the SEC petition evaluation report that was signed and dated August 30th, 2006, and that's where the dates don't match up. We need to know what document we're going from so we can refer to it.

MR. ROLFES: Okay, yes, the proposed class definition in the SEC evaluation report was January 1st, 1948 to December 31st, 1949.

DR. POSTON: You said the 30th?

DR. ROESSLER: December 31st, 1949.

MR. GRIFFON: That's the proposed. And then Section 9 -- I think I'm looking at page 38 where it clarifies it, Mark, if you want to look.

MR. ROLFES: Thank you.

MR. GRIFFON: The second paragraph is year. For the purposes of this evaluation, the period from January 1st, '48 through April 30th, '49, is evaluated as the operational period. I think this is what you're, if that helps you, Mark.

MR. ROLFES: I'm looking at page 38 at the top, and it says Table 7-8 summarizes the results of the feasibility findings at Chapman Valve for each exposure source for the time period January 1st, 1948 to December 31st, 1949, and from January 1st, 1991 through December 31st, 1993.

MR. GRIFFON: And then on down below in Section 9.0 I think you, at the bottom of page 38, the second paragraph was useful for me to look at.

MR. ROLFES: Okay, for the purposes of this evaluation, the period from January 1st, 1948

through April 30th, 1949 are evaluated as the operational period. The periods from May 1st, 1949 through December 31st, 1949 and from January 1st, 1991 through December 31st, 1993 are evaluated as residual radioactivity periods.

MR. GRIFFON: And then you, this is what you kind of describe. The latter time period of the petitioner requested class was reduced from ’91 through ’95, to ’91 through ’93 in order to expedite the evaluation of the SEC petition.

MR. ROLFES: That’s correct.

MR. GRIFFON: For the period ’94 through ‘5, ’94 through ’95 period, will be evaluated as a remediation period. That’s a separate, so that’s going to be a separate SEC evaluation. Am I reading that correct?

MR. ROLFES: Let me verify what the actual class definition or initially our proposed class was. Yes, we did receive an initial proposed class definition from the petitioner to include ’91 to ’95. So we have evaluated ’91 through ’93 in this document, and we would have to evaluate the years of 1994 and 1995 as

well.

MS. BLOOM: If we have, I think we need to verify that we have a claim then. Is that true? If there's no claim during that period, would that still have to be evaluated?

MR. ROLFES: I don't believe we have a claim at this time, and I'm not sure honestly how that would work. If we don't have a claim, why we would need to evaluate --

DR. WADE: Well, let's just talk about what we're doing now, and we'll worry about that later. So what is the petition evaluation report that the Board will likely vote on and that this work group will comment on? What are the dates?

MR. ROLFES: Would you like me to summarize that, Lew?

DR. WADE: Yes, please.

MR. ROLFES: This would be January 1st, 1948 through the end of 1949, which would be December 31st, 1949, and then also January 1st, 1991 through December 31st, 1993.

DR. WADE: And anything that goes beyond 12/31/93 is not being dealt with here. How, and if it needs to be dealt with is another

determination.

DR. NETON: Lew, this is Jim Neton. I've got LaVon coming up to my office right now to clarify because he is the one who has his pulse on all these dates and where they are, but I think what you said is correct. I want to verify that that's --

MR. GRIFFON: Yeah, that seems correct, and can I ask again back to my original question. So we are voting on at least some residual periods, not the clean up periods from '94 and '5, '94 and '95, but this residual period which is what you're saying, '91 through '93, and also May 1st of 1949 through December 31st, 1949, are considered residual exposure time periods.

How are -- and this is a refresher for me really, I apologize. But how are you assigning dose during those time periods? Is that in the site profile that's based on what, some survey data or what's the basis? I'm trying to remember.

MS. BLOOM: It was based on the FUSRAP Survey data.

DR. MAURO: And I recall one of the, and now

that we're bringing these up because we really haven't focused in on this in some time, I recall now that one of our concerns was that I believe the FUSRAP data were collected in the '80s. And you're applying 1980 data for that residual time period that covered, I guess, from May through December of '49.

That was the time period that it was called a residual exposure, and the 1980 data from FUSRAP was used as a basis for reconstructing doses for that time period. And we did express some concern that won't work because of the several decades between those two time periods. However, conversely, we felt that the FUSRAP data collected, I believe, in the late '80s perhaps, whatever the time frame was --

MR. GRIFFON: I think it was actually the '90s, right, Cindy?

DR. MAURO: The data was collected in the '90s? Okay, then that data did look good for the residual period that was covered in, I guess, it was 1990 that is part of the scope here, the '91 to '93 or '94. So I remember, it's coming back to me. I remember that it

looked like inadequate data to reconstruct doses.

And our report says this on your evaluation report. But it did look like there were some weaknesses in using that very same data to reconstruct residual exposures in the late 1949 time period. I think that might still be an issue that's on the table that we raised, SC&A raised, and that perhaps that's a subject that we should discuss.

MS. BLOOM: I misspoke before; there is one employee in that later years (sic). He was a stockroom/warehouse employee that was still onsite.

DR. WADE: Okay, let's deal with the issue of the second half of 1949.

MS. BLOOM: I think even there, even though we know things were shipped off there, I think that the exposure assumption for that whole first third of the year based on the 70 MAC is going to be claimant favorable for 1949 especially when included with the later data.

I have started to look at the contamination remaining based on the H.K. Ferguson Report. And that doesn't initially

seem to contradict anything that I've looked at in terms of what the contamination levels that were measured in the 1990s were. So I think it will turn out, although I won't swear to it, but I think it will turn out that the numbers from the FUSRAP Survey will be in the right ballpark and probably favorable.

DR. WADE: But for the second half of '49 you're proposing to use the exposures from the first half of '49? Is that what I heard you say?

MS. BLOOM: No, I'm saying that we've already accounted for a lot of exposure during that period because we know that material was sitting in cans waiting to be shipped. And we weren't sure exactly when the shipping date was.

Now the report that we have is much more definitive in terms of saying everything was packaged up and things were neat and tidy by that date, by the end of 1948. But we've already included exposures through April 30th, 1949 because we had some uncertainty there about when material was actually moved offsite.

MR. GRIFFON: I guess in theory, Cindy, someone could have started on May 1st, 1949, right? Then they'd only get the residual exposure.

MS. BLOOM: Right, right. And again, I --

MR. GRIFFON: I see what you're saying, but I guess there is the potential.

MS. BLOOM: Again, I've started to look at the H.K. Ferguson data as well, and what I'm seeing there is that doesn't appear to be contradicting anything that I'm finding in the regular years.

MR. GRIFFON: Your back extrapolation from the '90s --

MS. BLOOM: Right.

DR. MAURO: It looks like there's a lot of discussion and description of the decontamination program that took place following operations with a lot of information there. And you're right. If that information could certainly be used as a basis to compare to the 1990 FUSRAP data to see if they ring true. So I do think you have a hook upon which to confirm that the assumptions will work for those workers who might have only

worked there post-May 1st, 1949.

MS. BLOOM: Uh-huh.

MR. CLAWSON: Help me out. This is Brad, because everybody's been throwing out dates there. So what dates are we actually looking at? I looked at the site profile, and it says you have production reports clear up to April 30th, 1949. What dates are we going to be looking at here?

MS. BLOOM: The site profile says that there was a shipment of waste offsite some time, it appeared there was one letter that indicated that it happened at the end of 1948. There was another letter that indicated that it might have happened in '49. I found an inventory report from Electromat* that had a processing date of the Chapman Valve waste in April of 1949. And that's why I assigned that April 30th, 1949, because I didn't have any other date to close out that period.

So although the indications were that the work had all been completed by the end of 1948, we didn't know exactly when the materials had shipped, and so that April 30th date was a conjecture on our part. We now

have some more information that indicates that -- and I'm not sure that I saw a shipping date in here, but it looks like we've got clean up numbers, and we can pin the whole thing down better.

MR. CLAWSON: So this SEC petition, we are just looking at the end of 1948 then?

DR. NETON: Yes, Brad, I can read to you right from the proposed class definition. It's January 1st, 1948 through December 31st, 1949, and then from January 1st, 1991 through December 31st, 1993. 'Ninety-three, it stops at December 31st, 1993 because there was subsequent clean-up work by Bechtel for DOE.

We don't have the data for it. We're still trying to get it, and we didn't feel comfortable at that time that we were going to get it in a timely manner. And it turns out we didn't, and so therefore to move this thing forward we said through December 31st, 1993 is as far as we can evaluate this SEC.

MR. CLAWSON: Okay, I was just, there was a lot of different dates going around there, and I was kind of getting confused --

DR. NETON: But those are the two that are

on the proposed class definition, January '48 through December '49; January '91, December of '93.

DR. MAURO: Jim, I noticed in looking at Appendix C of the Ferguson Report which is dated January 17th, 1949, it is a very detailed description of the decontamination operations at the plant.

DR. NETON: Exactly.

DR. MAURO: And the only thing, I guess, when I was looking at it, I noticed that they expressed lots and lots of information on swipe samples expressed in terms of DPM. That is, after clean up they took swipes, and they cleaned up some more and took some more swipes. And everything is expressed in terms of DPM. I'm used to seeing DPM per hundred centimeters squared.

MS. BLOOM: Those are per hundred square centimeters in the text in there. It says that all wipes were taken in a hundred square centimeters.

DR. MAURO: Thank you for that clarification. So I think I have to say from my perspective I think you have an enormous

amount of information in order to fully characterize the time period between May 1st, 1949 and the end of 1949 contained in Appendix C to the Ferguson Report.

MS. BLOOM: Pardon?

MR. GRIFFON: I was asking what page that was on.

DR. MAURO: Page 63.

MR. GRIFFON: Sixty-three.

DR. POSTON: Anything else we need to discuss?

MR. GRIFFON: I'm trying to pull up the page. Did they talk about decontamination of the roof?

DR. MAURO: Yes, everything.

DR. NETON: It goes all the way through page 75, so it's a fairly detailed description of all the decontamination operations.

MR. GRIFFON: That makes me happy. It looks like most of the contamination was on the roof.

DR. NETON: A lot of it. They blew that back from the furnace went out on the roof.

DR. MAURO: Yep.

DR. POSTON: Is everybody still in agreement

though with the way we decided to proceed?

MR. GRIFFON: Yes.

DR. POSTON: Is there anything else that we need to discuss on this call?

(no response)

DR. POSTON: Well then, my understanding of how we will proceed is that Dr. Roessler and I will get together as soon as possible this week, try to put together a statement as to what are the conclusions of this work group, and we'll circulate it to the work group so if anyone has comments or has a minority opinion, they will have the opportunity to express that at the May meeting. And also, that Dr. Roessler will represent the working group at the Board meeting. I will not be able to attend.

Is there anything else?

(no response)

DR. POSTON: Are we ready to adjourn?

MR. CLAWSON: Jim, this is Brad.

DR. NETON: Yes.

MR. CLAWSON: Gen, Gen Roessler?

DR. ROESSLER: Yes, yes, Brad.

MR. CLAWSON: I've got some work away from

my other work out there. I just wanted to make sure if you could send that to me to my home address. I believe that you have that.

DR. ROESSLER: Okay, home e-mail address?

MR. CLAWSON: Yeah, that's my msn address.

DR. ROESSLER: Well, listen, let me jot it down to make sure.

MR. CLAWSON: Okay, because I won't be able to get my site.

DR. ROESSLER: Okay, give it to me now.

MR. CLAWSON: [Information Redacted]

DR. ROESSLER: I'll make sure we use that one.

MR. CLAWSON: Okay, thank you so much.

DR. POSTON: Well, thank everyone for your time and your contributions, and we'll get this out to you as soon as we can. And I'm sorry I'm not going to see you in Denver, but I'm sure I'll see you at the next meeting.

DR. WADE: Thank you very much.

DR. POSTON: Thank you everyone, bye now.

(Whereupon, the working group meeting concluded at 10:40 a.m.)

CERTIFICATE OF COURT REPORTER

STATE OF GEORGIA

COUNTY OF FULTON

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of April 23, 2007; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 13th day of June, 2007.

_____

STEVEN RAY GREEN, CCR

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